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TITLE: Structural and Functional Analysis of CA125: Potential for Early Diagnosis and Understanding the Immune Evasion Strategies of Epithelial Ovarian Tumors

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14. ABSTRACT: The proposed studies will define the structure and the biological function of the epithelial ovarian tumor marker MUC16 (CA125). The knowledge obtained can be utilized to develop better diagnostic tests for early detection of ovarian cancer and also to understand the pathogenesis of this disease. Due to delays in procuring the appropriate approvals from the Institutional Review Boards we have not been able to initiate the proposed studies. We therefore do not have any major findings/accomplishments to report at this time.					
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INTRODUCTION: The major molecular marker for epithelial ovarian cancer is the antigen CA125. It is now known that CA125 is repeating peptide epitope that is expressed on the very large molecular weight mucin MUC16. The major goal of this project was to further understand the structure and biology of CA125 (hereafter referred to as MUC16) in order to enhance the capability of the serum CA125 test to detect epithelial ovarian cancer and also to understand the role of MUC16 in the pathogenesis of this malignancy. For this purpose we proposed to carefully analyze the oligosaccharides attached to MUC16 that was isolated from ovarian tumor cells *in vitro*, from the peritoneal fluid of ovarian cancer patients and from the amniotic fluid derived from pregnant women. Our hypothesis was that this analysis would help us distinguish between the different isoforms of the mucin. In the second and the third specific aims we proposed to study the role of MUC16 in inhibiting the innate (Natural killer; NK) cell and adaptive (T-cell) responses. The three specific aims of the proposal are listed below.

Specific Aim 1- Perform glycomic analysis of CA125 derived from cultured cells, ascites of EOC patients and human amniotic fluid.

Specific Aim 2- Determine if cell surface associated CA125 can protect OVCAR-3 cells from NK cell mediated cytolytic responses.

Specific Aim 3- Determine if CA125 can modulate the function of T cells.

BODY: We have not used any funds provided through this Department of Defense (DOD) grant. This was primarily because of the delay in acquiring the requisite approvals from the Institutional Review Boards of the PI's institution. We therefore do not have any major advances to report at this time.